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EXAMINER	
KIM, YOUNG J	
ART UNIT	**PAPER NUMBER**
1637	

DATE MAILED: 11/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/989,420	MINENO ET AL.	
	Examiner	Art Unit	
	Young J. Kim	1637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-9,12-21 and 23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7-9,12-21 and 23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The instant Office Action is a complete response to the Amendment received on August 19, 2005.

Preliminary Remark

The cancellation of claims 10, 11, and 22; and the submission of new claim 23 are acknowledged.

Claims 7-9, 12-21, and 23 are pending and are under prosecution therefore.

The instant Office Action contains at least one rejection which is not necessitated by the entry of the instant Amendment, and therefore is made **Non-Final**.

Claim Objections

The objection of claims 10 and 11 for being in improper dependent forms, made in the Office Action mailed on March 22, 2005 is withdrawn in view of the Amendment received on August 19, 2005, canceling the claims.

Claim Rejections - 35 USC § 112

The rejection of claims 13-21 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter, made in the Office Action mailed on March 22, 2005 is withdrawn in view of the Amendment received on August 19, 2005, amending claim 13 to an independent form.

The scope of enablement rejection of claims 10, 11, and 14 under 35 U.S.C. 112, first paragraph as enabling for method employing a hydrodynamic point-sink shearing fragmentation method but non-enabling for any fragmentation methods is withdrawn in view of careful

reconsideration of the application (for claim 14) and in view of their cancellation (for claims 10 and 11).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7-9, 12-21, and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 is indefinite for reciting the phrase, "producing DNAs corresponding to said mixture of fragmented DNAs, to give a genomic DNA library maintaining ...and an abundance ratio of said set of genes or sequences on the gnomic DNA," because the metes and bounds of the term, "abundance ratio" is not defined in the claims or the specification. Therefore, it is unclear how an abundance ratio is calculated and what ratio determined is considered to be "abundant."

Claim 13 is also indefinite for containing the same term.

Claims 8, 9, and 12 are indefinite by way of their dependency on claim 7.

Claims 14-21 and 23 are indefinite by way of their dependency on claim 13.

Claim 13 is indefinite for reciting the phrase, "carrying out nucleic acid amplification using the DNA fragments obtained in step (b) as template **and amplification primers thereby...**" because it is unclear whether the amplification is achieved by employing DNA fragments as templates as well as primers (*i.e.,* fragments priming each other), or the phrase is intending to state that the DNA fragments are employed as templates and amplification is conducted with primers. The latter interpretation is assumed for compact prosecution.

Claims 14-21 and 23 are indefinite by way of their dependency on claim 13.

Rejection – Maintained

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The scope of enablement rejection of claims 7-9, 12, 13, 15-21, and 23, for enabling a method involving a hydrodynamic point-sink shearing fragmentation method, while not enabling a method involving a variety of fragmentation methods, made in the Office Action mailed on March 22, 2005 is maintained for the reasons of record.

Applicants' arguments presented in the Amendment received on August 19, 2005 have been fully considered but they are not found persuasive.

The Rejection:

Factors to be considered in determining whether a disclosure would require undue experimentation are summarized in In Re Wands (858 F.2d 731, 8 USPQ2d 1400 (Fed. Cir. 1988)). They include (A) the quantity of experimentation necessary, (B) the amount of direction or guidance presented, (C) the presence or absence of working examples, (D) the nature of the invention, (E) the state of the prior art, (F) the relative skill of those in the art, (G) the predictability or unpredictability of the art, and (H) the breadth of the claims.

Breadth of the Claims:

The breadth of the claims involve a method of producing a genomic DNA library, wherein the nucleic acid fragments making up the library is restricted in its size (by size ratio) and an abundance ratio (of 85% or more). Currently, the method claims embrace any fragmentation method, implicated by the phrase, "preparing a mixture of fragmented DNAs," without further reciting a specific fragmentation process.

Nature of the Invention:

The description of the invention is clear in iterating that the novel feature of the claimed invention:

> "The present invention is based on the surprising finding made by the inventors that a DNA obtained by subjecting a genomic DNA to DNA fragmentation means capable of exhibiting specific performances, thereby giving fragmented DNAs...." (page 9, lines 2-4)

The limitations imposed by the claims is clear that the novel feature of the invention relies on the fragmentation process which allows the generation of requisite length and size of the DNA fragments.

The question of scope of enablement rests on whether Applicants enabled a genus of fragmentation methods which produce the requisite length and size of the DNA fragments.

Amount of direction or guidance presented:

Looking at the instant specification, Applicants discuss ***a single type*** of fragmentation method that would produce the claimed distribution ratio and size convergence:

> "More concretely, the physical method includes the hydrodynamic point-sink shearing method...In the method for producing a genomic DNA library of the present invention, the ***hydrodynamic point-sink shearing*** method is preferred from the viewpoint of efficiently obtaining a fragmented DNA which ***meets the requirements*** for the distribution ratio, the size convergence rate, and the average size" (page 16, lines 5-12).

> "Each of genomic DNA for the gastric cancer cell line MKN74 and genomic DNA for the esophageal squamous cell cancer cell line TE6 was extracted by a commonly used nucleic acid extraction method...The resulting DNA solution was fragmented (sheering speed: 5) by using random DNA fragmentation apparatus ***Hydroshear™***..." (page 27, lines 8-16)

While Applicants make a prophetic statement regarding other types of fragmentation methods embraced by the instant application, which would produce the desired distribution ratio,

the size convergence rate, and the average size, not a single type fragmentation method other than hydrodynamic point-sink shearing method is disclosed.

> "Incidentally, there are also encompassed in the scope of the present invention applications of other methods ***having functional abilities to give a fragmented DNA which meets the requirements for the distribution ratio, the size convergence rate, and the average size, in place of the physical method in the method for producing a genomic DNA library of the present invention***." (page 16, lines 21-25)

Hence, it would require undue experimentation of a skilled artisan to determine what of the many nucleic acid fragmentation steps known in the art would possibly produce DNA fragments of requisite limitations imposed by the claims.

Absence of Working example:

Looking at the instant specification, Applicants discuss ***a single type*** of fragmentation method that would produce the claimed distribution ratio and size convergence:

> "Each of genomic DNA for the gastric cancer cell line MKN74 and genomic DNA for the esophageal squamous cell cancer cell line TE6 was extracted by a commonly used nucleic acid extraction method...The resulting DNA solution was fragmented (sheering speed: 5) by using random DNA fragmentation apparatus ***Hydroshear™***..." (page 27, lines 8-16)

State of Prior art:

Lucito et al. disclose a method of generating a DNA library involving one of many well known fragmentation mechanisms – via use of a restriction enzymes (page 4487, 2nd column, 2nd paragraph).

Skill level:

The skill level of the artisan in question is considered high.

Unpredictability of the art:

It remains unpredictable what other fragmentation method would necessarily produce the DNA fragments having the claimed distribution ratio as well as the size convergence rate of 80% or more. Such should be evident when even Applicants state that the invention is based on a "surprising discovery."

Conclusion:

MPEP 2164.01, in discussing the test of enablement, states:

> "Any analysis of whether a particular claim is supported by the disclosure in an application requires a determination of ***whether that disclosure, when filed***, contained sufficient information regarding the subject matter of the claims as to enable one skilled in the pertinent art to ***make and use*** the claimed invention."

One of skill in the art, in order to practice the method fully commensurate in scope of the claims, would look to the specification in order to determine what of the many known fragmentation methods could be employed to generate the DNA fragments of requisite size and abundance. As the specification does not give any guidance or example other than a single species of fragmentation method – hydrodynamic point-sink shearing method – one skilled in the art would be led to empirically experiment each and every known fragmentation methods so as to determine the enabling scope embraced by the claims. Such requirement would clearly amount to an undue experimentation of a skilled artisan to practice the claimed invention fully commensurate in scope of the claims.

Response to Arguments:

Applicants state that the present invention essentially relates to preparation of a genomic DNA library maintaining copy numbers of a set of genes or sequences on the genomic DNA and an abundance ratio of the set of genes or sequences on the genomic DNA, and *is not characterized by the method of DNA fragmentation.* Applicants state that the method of DNA fragmentation, the genomic

DNA library of the present invention can be produced by using a mixture of fragmented DNAs having distribution ratio of 1 to 5 and having a size convergence rate of 80% or more (page 7, bottom to page 8, 1st paragraph; Response).

As already discussed above, it appears that the novel or patentable feature to which Applicants rely on is based on the ability to first generate DNA fragments of the requisite size and abundance limitation. This determination is proper since the subsequent methods of generating amplified products – *i.e.,* the use of adaptors and primers complementary to adaptor sequences – are well known methods of generating DNA libraries.

The instant specification discloses a single species of fragmentation which is able to achieve such products. No other species of fragmentation methods are disclosed in the specification other than prophetic statement:

> "Incidentally, there are also encompassed in the scope of the present invention applications of other methods having functional abilities to give a fragmented DNA which meets the requirements for the distribution ratio, the size convergence rate, and the average size, in place of the physical method in the method for producing a genomic DNA library of the present invention." (page 16, lines 21-25)

However, other than trial and error method for every single nucleic acid fragmentation methods in the art, it appears that one skilled in the art would not be able to practice the method commensurate in scope of the claims.

The arguments are not found persuasive therefore, and the rejection is maintained.

With regard to arguments drawn to "means-plus-function," as claims are amended to delete the language, the argument is considered moot and not applicable to the rejection.

Claim Rejections - 35 USC § 102 – withdrawn

The rejection of claims 7-12 under 35 U.S.C. 102(b) as being anticipated by Oefner et al. (Nucleic Acids Research, 1996, vol. 24, no. 20, pages 3879-3886), made in the Office Action mailed on March 22, 2005 is withdrawn in view of the Amendment received on August 19, 2005, amending the claims to require amplification primers in the "amplification" step.

Claim Rejections - 35 USC § 103 – Maintained & Necessitated by Amendment

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The rejection of claims 7-9 and 13-16 under 35 U.S.C. 103(a) as being unpatentable over Oefener et al. (Nucleic Acids Research, 1996, vol. 24, no. 20, pages 3879-3886) in view of Lucito et al. (PNAS, 1998, vol. 95, pages 4487-4492), made in the Office Action mailed on March 22, 2005 is maintained for the reasons of record.

Claim 12 is rejected necessitated by Amendment.

Applicants' arguments presented in the Amendment received on August 19, 2005 have been fully considered but they are not found persuasive for the following reasons.

The Rejection:

Oefener et al. disclose a method of producing a plurality of random DNA fragments via point-sink fragmentation method, which is hydrodynamic (or physical means) in mechanism (page 3880, 1st column, 2nd paragraph).

Oefener et al. disclose that the major advantage of their method produces greater randomness of fragmentation sites and >90% yield fragments over 2-fold size range (page 3876, 2nd column, 2nd paragraph).

While Oefener et al. do not explicitly disclose that the DNA fragments produced by their method has the distribution ratio of 1 to 5 and a size convergence rate of 80% or more, the instant specification explicitly evidences that such method would necessarily produce the DNA fragments of the above-recited characteristics:

> "More concretely, the physical method includes the hydrodynamic point-sink shearing method [Peter J. Oefner et al., *Nucleic Acids Res.*, 24, 3879-3886 (1996);...More concretely, the physical method includes the hydrodynamic point-sink shearing method...In the method for producing a genomic DNA library of the present invention, the ***hydrodynamic point-sink shearing method is preferred from the viewpoint of efficiently obtaining a fragmented DNA which meets the requirements for the distribution ratio, the size convergence rate, and the average size***" (page 16, lines 5-12).

The fragmentation method is disclosed as being "point-sink" (page 3881, 2nd column, bottom paragraph).

The fragmentation (or shearing) method employed by Oefener et al. is disclosed as producing fragments ranging from 296 bps to 12 kbps.

Oefener et al. do not employ ligation of adapters to their fragmented DNAs followed by an amplification of said adapter ligated DNA fragments via use of primers.

Oefener et al. do not employ PCR method for amplification of the adapter ligated DNA fragments.

Oefener et al. do not employ primers that comprises a sequence complementary to the adapters of the adapter ligated DNA fragments.

Lucito et al. disclose a method of generating a genomic DNA library involving the steps of fragmenting a genomic DNA; ligation of adapters thereto, producing adapter-ligated DNA fragments; followed by the PCR amplification said adapter-ligated DNA fragments (page 4487, 2nd column, 2nd paragraph). The amplification is achieved via use of AmpliTaq, in a thermocylcing reaction, said reaction involving temperatures of 77 and 95°C (page 4487, 2nd column 2nd paragraph).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Oefener et al. with the teachings of Lucito et al. for the following reasons.

Oefener et al. clearly and explicitly discuss that their method involving random fragmetion of genomic DNA molecules via point-sink flow system is for generating DNA library (page 3876, 1st column, *Introduction*) and subcloning prior to DNA sequence analysis.

While Oefener et al. employ shotgun cloning method in amplifying their fragmented DNA molecules, one of ordinary skill in the art would have been easily motivated to modify the teachings of Oefener et al. with the well-known amplification techniques such as adapter-mediated amplification of Lucito et al., because by doing so, one ordinary skill in the art would have been able amplify DNA fragments for DNA sequence analysis, such as nucleic acid sequencing, AFLP, etc.

One of ordinary skill in the art, at the time the invention was made would have had a reasonable expectation of success at combining the teachings as Oefener et al. already employ the adapter ligation to the DNA fragments. While the artisans employ the adapters for introducing the adapter-ligated DNA fragments into the vector, one of ordinary skill in the art would have had a reasonable expectation of success at employing primers which were complementary to these adapters for the amplification of the fragments as evidenced Lucito et al.

With regard to the limitation of DNA library maintaining 85% or more copy numbers of a set of genes or sequences on a genomic DNA, since Oefener et al. employ an identical method of fragmenting DNA molecules and as Lucito et al. employ an identical method of adapter-assisted amplification, barring evidence to the contrary, the combination of the method would necessarily produce a DNA library maintaining 85% or more copy numbers of a set of genes.

According to *In re Best* 195 USPQ 430, 1997, the court stated that, "Patent Office can require applicant to prove that prior art products do not necessarily or inherently posses characteristics of his claimed product wherein claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on applicant" (pp. 430).

Therefore, the invention as claimed is *prima facie* obvious over the cited references.

Response to Arguments:

Applicants first contend that Lucito does not teach the claimed method (page 11, lines 1-3; Response).

This argument is not found persuasive because Applicants cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Next, Applicants contend that in Oefner, a fragmentation method is disclosed such that more than 90% of the fragments exist within a 2-fold size distribution, but "fails to teach or suggest distribution ratio, abundance ratio, and compositional aspect of each fragmented genomic DNA in amplification of nucleic acids." (page 11, 3rd paragraph).

This arguments is again not found persuasive because Oefner et al. disclose a different method of amplifying their DNA fragments (via cloning). Again, Applicants attempt to show nonobviousness by attacking references individually.

The question is whether the method produced by the ***combination of*** the cited references would render the claimed invention obvious. Whether or not the DNA fragmentation of Oefner would produce DNA fragments of the requisite distribution ratio, the size convergence rate and the average size has already been admitted by Applicants:

> "More concretely, the physical method includes the hydrodynamic point-sink shearing method [Peter J. Oefner et al., *Nucleic Acids Res.*, 24, 3879-3886 (1996);...More concretely, the physical method includes the hydrodynamic point-sink shearing method...In the method for producing a genomic DNA library of the present invention, the ***hydrodynamic point-sink shearing method is preferred from the viewpoint of efficiently obtaining a fragmented DNA which meets the requirements for the distribution ratio, the size convergence rate, and the average size***" (page 16, lines 5-12).

The Oefner et al. cited by applicants, which purportedly disclose the same point-sink shearing method which is the preferred method of fragmentation for "efficiently obtaining a fragmented DNA which meets the requirement for the distribution ratio, the size convergence rate, and the average size," is same Oefner et al. reference relied on by the rejection. Hence, it is clear that the fragmentation method of the Oefner et al. reference would necessarily produce the DNA fragments of claimed limitations. The amplification of such fragments via use of adaptors, is well-established in the art as evidenced by the second reference, Lucito et al. The use of adaptors are especially well known in the art for their advantage of amplifying fragments which there is no *a priori* knowledge of the fragments being amplified.

Hence, the combination of references would necessarily produce the DNA library of the claimed limitations and the rejection is maintained for the reasons of record.

The rejection of claims 17-21 under 35 U.S.C. 103(a) as being unpatentable over Oefener et al. (Nucleic Acids Reearch, 1996, vol. 24, no. 20, pages 3879-3886) in view of Lucito et al. (PNAS, 1998, vol. 95, pages 4487-4492) as applied to claims 7-16 above, and further in view of Sorge et al. (U.S. Patent No. 5,556,772, issued September 17, 1996), made in the Office Action mailed on March 22, 2005 is maintained for the reasons of record.

Claim 23 is also rejected necessitated by amendment (new claim).

Applicants' arguments presented in the Amendment received on August 19, 2005 have been fully considered but they are not found persuasive for the following reasons.

The Rejection:

The teachings of Oefener et al. and Lucito et al. have already been discussed above.

Particularly, Lucito et al. employ a thermostable DNA polymerase, AmpliTaq DNA polymerase in their amplification method (page 4487, 2nd column 2nd paragraph).

Oefener et al. and Lucito et al. do not employ a DNA polymerase having a proofreading activity for the amplification.

Oefener et al. and Lucito et al. do not employ a combination of a DNA polymerases having a 3'→5' exonuclease activity and a DNA polymerase lacking 3'→5' exonuclease activity.

Oefener et al. and Lucito et al. do not employ a combination of α type DNA polymerase and non-α, non-pol I type DNA polymerase.

Sorge et al. disclose a method of amplifying a nucleic acid with a combination of proofreading DNA polymerase (*Pfu*) and *Taq* DNA polymerase (column 2, lines 7-13).

Pfu DNA polymerase is disclosed as having 3'→5' exonuclease activity (column 3, lines 5-46), while *Taq* Dna polymerase is discloses lacking 3'→5' exonuclease activity (column 4, lines 14).

It is well-known that 3'→5' exonuclease activity is synonymous with "proofreading" activity (column 6, line 6).

The instant specification evidences that *Pfu* DNA polymerase is an □ type DNA polymerase [0117].

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings with Oefener et al. and Lucito et al. with the teachings of Sorge et al., because by doing so, one of ordinary skill in the art at the time the invention was made would have been able to amplify the desired nucleic acid with "superior synthesis results" via use of a combination of the DNA polymerase of Sorge et al. rather than the use of a single DNA polymerase which had been employed by Oefener et al. and Lucito et al.

Therefore, the invention as claimed is *prima facie* obvious over the cited references.

Response to Arguments:

Applicants' arguments are based on the whether the rejection of parent claim 13 based on the combination of Oefner et al. and Lucito et al. references would render the claimed invention obvious. Applicants' lack any arguments drawn to the propriety of the Sorge reference.

As discussed above, parent claim 13 is obvious, and therefore, the rejection of claims 17-21 is maintained for the reasons of record.

Conclusion

No claims are allowed.

Inquiries

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Young J. Kim whose telephone number is (571) 272-0785. The Examiner is on flex-time schedule and can best be reached from 8:30 a.m. to 4:30 p.m. The Examiner can also

be reached via e-mail to Young.Kim@uspto.gov. However, the office cannot guarantee security through the e-mail system nor should official papers be transmitted through this route.

If attempts to reach the Examiner by telephone are unsuccessful, the Primary Examiner in charge of the prosecution, Dr. Kenneth Horlick, can be reached at (571) 272-0784. If the attempts to reach the above Examiners are unsuccessful, the Examiner's supervisor, Dr. Gary Benzion, can be reached at (571) 272-0782.

Papers related to this application may be submitted to Art Unit 1637 by facsimile transmission. The faxing of such papers must conform with the notice published in the Official Gazette, 1156 OG 61 (November 16, 1993) and 1157 OG 94 (December 28, 1993) (see 37 CFR 1.6(d)). NOTE: If applicant does submit a paper by FAX, the original copy should be retained by applicant or applicant's representative. NO DUPLICATE COPIES SHOULD BE SUBMITTED, so as to avoid the processing of duplicate papers in the Office. All official documents must be sent to the Official Tech Center Fax number: (571) 273-8300. For Unofficial documents, faxes can be sent directly to the Examiner at (571) 273-0785. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-1600.

Young J. Kim
Patent Examiner
Art Unit 1637
11/12/2005

YOUNG J. KIM
PATENT EXAMINER

yjk